Virginia's Approach to the Chesapeake Bay TMDL

House Committee on Agriculture, Chesapeake and Natural Resources

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DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

DCR
Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Presentation Contents

- TMDL Overview
- July 1 Nutrient Allocations
- Virginia WIP Process/Schedule – From now until December 2010 and beyond

Key Terms:

- **TMDL** – "Total Maximum Daily Load" (Pollution "Diet" for Chesapeake Bay and Tidal Tributaries)
- **WIP** – Watershed Implementation Plan - Plans developed by the states and the District to meet TMDL allocations
- **Allocations** – Maximum amount of Nitrogen, Phosphorus, or Sediment entering waters in order to achieve Chesapeake Bay and tidal portions of tributaries' water quality standards. Assigned by EPA to major river basins.

Virginia Agencies

- Secretary of Natural Resources
- Secretary of Agriculture and Forestry
- DEQ – Wastewater, CAFO, industrial stormwater
- DCR - Urban Stormwater, Agricultural Cost-Share
- VDACS – Agriculture
- DOF – Forestry
- VDH – Onsite treatment/septic

Revised TMDL & WIP Schedule

Deliverable	Previous Schedule	Revised Schedule
1st WIP Scoping Model Runs promised by EPA	2/25/2010	3/31/2010; problems continue
Preliminary Phase 1 WIPs	6/1/2010	Not required
Draft Phase 1 WIPs	8/1/2010	9/1/2010
Bay TMDL public comment period	8/15 to 10/15/2010	9/24 to 11/8/2010
Final Phase 1 WIPs	11/1/2010	11/29/2010
Bay TMDL Established	12/31/2010	12/31/2010
Final Phase 2 WIPs	11/1/2011	11/1/2011
Final Phase 3 WIPs	11/1/2017	11/1/2017

EPA's Bay Model Concerns

- Loadings released in Nov. 2009 were less stringent than tributary strategy required; July 2010 more stringent
- Continuous delays in meeting model related commitments
- Inaccurate urban land use and loadings
- Problems crediting nutrient management reductions & manure transfer decisions
- Model only credits limited number of practices
- Land use "in model" constrains crediting known BMPs on actual land use
- Under predicts stream channel erosion

Virginia Draft Allocations

Nitrogen – [Million Pounds/Year]

VA Basins	1985	Tributary Strategies	2009	EPA Target Loads Nov 2009	EPA Draft Allocations July 2010
Shen/Pot	28.2	16.38	20.1	16.09	17.46
Rapp	8.2	5.62	7.0	6.49	5.84
York	7.0	5.09	6.4	6.53	5.41
James	41.0	27.53	30.4	28.49	26.79 ***– 3.31 = 23.48***
E. Shore	2.0	1.03	1.9	1.61	1.21
VA Totals	86.5	55.66	65.7	59.22	56.71 ***– 3.31 = 53.40***

Allocations shown in white are based on meeting dissolved oxygen standards in the Bay and tidal rivers.
Allocations shown in yellow italics are based on EPA's determination that nutrients entering the tidal James River need to be further reduced to achieve chlorophyll standards.

Virginia Draft Allocations

Phosphorus – [Million Pounds/Year]

VA Basins	1985	Tributary Strategies	2009	EPA Target Loads Nov 2009	EPA Draft Allocations July 2010
Shen/Pot	2.19	1.70	1.93	1.97	1.47
Rapp	1.29	0.94	1.09	0.82	0.90
York	1.03	0.59	0.63	0.61	0.54
James	6.533	3.28	3.30	3.50	2.69 ***– 0.35 = 2.34***
E. Shore	0.26	0.13	0.19	0.15	0.16
VA Totals	11.31	6.64	7.14	7.05	5.76 ***– 0.35 = 5.41***

Allocations shown in white are based on meeting dissolved oxygen standards in the Bay and tidal rivers.
Allocations shown in yellow italics are based on EPA's determination that nutrients entering the tidal James River need to be further reduced to achieve chlorophyll standards.

EPA's Temporary Reserve

- EPA has included a temporary reserve of 5% for each jurisdiction to account for EPA's Bay model shortcomings
- For VA, this temporary reserve amounts to:
  - 2.67 Million Pounds per Year (MPY) for Nitrogen
  - 0.27 MPY for Phosphorus
- EPA expects 2010 WIP to present actions needed to meet total VA allocation less reserve:

53.4 – 2.67 = **50.73** MPY for Nitrogen

6.5 - .27 = **5.14** MPY for Phosphorus

Nitrogen Progress and Goals
[Million Pounds/Year]

VA Basins	Nitrogen 1985	Nitrogen 2009 Progress	Nitrogen 2017 60% Progress	Nitrogen 2025 TMDL
Shen/Pot	28.2	20.1	18.52	17.46
Rapp	8.2	7.0	6.30	5.84
York	7.0	6.4	5.81	5.41
James	41.0	30.4	28.23 ***– 1.99 = 26.25***	26.79 ***– 3.31 = 23.48***
E. Shore	2.0	1.9	1.49	1.21
VA Totals	**86.5**	**65.7**	60.35 ***– 1.99 =*** ***58.36***	56.71 ***– 3.31 =*** ***53.40***

Phosphorus Progress and Goals
[Million Pounds/Year]

VA Basins	Phosphorus 1985	Phosphorus 2009 Progress	Phosphorus 2017 60% Progress	Phosphorus 2025 TMDL
Shen/Pot	2.19	1.93	1.65	1.47
Rapp	1.29	1.09	0.98	0.90
York	1.03	0.63	0.58	0.54
James	6.533	3.30	2.93 ***– 0.21 = 2.72***	2.69 ***– 0.35 = 2.34***
E. Shore	0.26	0.19	0.17	0.16
VA Totals	**11.3**	**7.14**	6.31 ***– 0.21 =*** ***6.10***	5.76 ***– 0.35 =*** ***5.41***

TMDL Allocations by State/District (in millions of pounds)

	Nitrogen	Phosphorus
Virginia	53.40	5.41
Maryland	39.09	2.72
Pennsylvania	76.77	2.74
Delaware	2.95	.26
New York	8.23* (.75 added)	.52
West Virginia	4.68	.75* (.2 added)
DC	2.32	.12
TOTAL	187.44	12.52

Reasonable Assurance

- Not yet fully defined by EPA

- EPA seeking “Proof” to EPA that Virginia will deliver required TMDL reductions including funding, auditable tracking and reporting, laws and regulations, etc.

Establish Progress Milestones

- TMDL schedule includes 2 year “milestones”
- Milestones will be tracked to determine rate of progress
- Adjustments to milestones may be needed.

EPA Consequences for not Achieving Milestones

- Expand NPDES permit coverage to currently unregulated sources
- Object to state issued NPDES permits
- Increase EPA oversight of state delegation
- Require net improvement offsets
- Very specific WLAs (permitted) and LAs (non-permitted)
- Require additional point source reductions
- Increase federal enforcement actions
- Condition or redirect EPA grants to Virginia
- Federal promulgation of local nutrient water quality standards

The Virginia Process:

- Broad-based Stakeholder Advisory Group "SAG" established in December 2009
- Continued and expanded by Secretary Domenech in 2010
- 3 full meetings so far
- Currently holding Sector Workgroup meetings
- "Steering Committee" meets in August
- SAG meets in August; more after Sept.

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Key SAG Issues

- Cost and Cost effectiveness: What are the right mix of practices and responsibilities?
- Sector Responsibilities: What is a fair assignment of responsibilities?
- Capacity of Existing Programs: Are additional resources and authorities needed?
- Real World vs. Model World: What practices and programs are most effective for actual water quality improvement?
- Accounting for Growth: How do we account for growth in loads from a growing population and economy?

Sector Work Groups

- Work Groups: Wastewater; Urban Stormwater; Agriculture, Onsite/Septic
- Charge: Bring sector specific recommendations for WIP to full SAG
- Each group is composed of interested SAG members supplemented by other “experts”
- Each workgroup has 2 co-chairs to serve on “steering committee”
- Each workgroup has met once with additional meeting scheduled.
- Steering Committee to meet on August 2, 9
- Full SAG to meet on August 24.

Wastewater Workgroup Issues

Two meetings: July 9 and 19

- Significant facilities currently implementing regulatory nutrient reduction requirements (cap loads) under watershed general permit for each river basin. Significant expenditures of state and local funds. Compliance period begins 2011.
- James River allocation
- Non-significant dischargers (expansions between 1,000 gpd and 40,000 gpd)
- Capacity for onsite hookups to treatment plants
- Requirements for new permit cycle

Onsite/Septic Workgroup Issues

Two meetings: July 15 and 26

- Rates of replacement on conventional systems
- Needs for “alternative” nitrogen reducing systems
- Other options to offset growth in load including expanding nutrient credit program
- Relationship to wastewater – capacity for hookups to treatment systems

Agriculture Sector Workgroup

Two meetings: July 8 and 21

- Discussed type and level of practices needed
- 2025 goal likely require high levels of BMPs; many 95% coverage
- Proposed reasonable assurance may change situation from largely voluntary to required
- Reasonable assurance could require greater technical assistance, financial incentives, laws & regulation
- Must account for growth in Ag: turf grass, landscape nursery, dairy consolidation
- Federal share unclear, no long-term commitment

Immediate Future: Ag may be the “easiest” sector to quickly accelerate reductions for 1st milestone period (2013)

Agriculture

Scoping Scenarios of BMP coverage

BMPs (partial list)	2008 % Treatment	Level 2 % Treatment	Level 3 % Treatment
Conservation Plans - Cropland	40.14%	65%	95%
Continuous No-till	7.84%	35%	45%
Livestock Stream Exclusion Fencing	11.34%	45%	95%
Nutrient Management - Cropland	51.16	90%	95%
Grass or Forest Buffers - Cropland	8.98%	33%	95%

Plus Many Others

Voluntary Ag & Forestry BMP Database (SB-346, 2010)

- Strategy for database due to GA & Gov 11/1/2010; SNR assisted by SAF
- Capture BMP information for reporting progress to achieve goals
- Determine who, what, when, where & how
- Collected information is VA FOIA exempt
- Will require reporting system, certification and auditing; additional technical staff support (funding)
- Potential to boost reportable BMPs “quickly”
- Could reduce long-term cost of achieving Ag BMP share state water quality goals

Urban Stormwater Sector Workgroup

Two meetings: July 12 and 28

- Discussed type and level of practices needed
- 2025 goal likely require high levels of BMPs
- Proposed reasonable assurance may require more laws & regulation
- Require major retrofit of existing development and no loading increase from new development
- Could result in major challenge to change law & regulations under Dillon Rule to provide local authority
- Developed land retrofits generally very expensive; property rights issues are significant
- Greater requirements in developed areas may further inhibit desirable redevelopment
- Urban stormwater is considered the most costly, least effective reduction sector
- Significant threat from EPA over restrictive consequences on construction general permits and MS4 permits (other NPDES permits too)

Accounting for growth: new development achieve TMDL loading for converted land and/or secure offsets to meet goals

Future: Means to achieve high levels of implementation; promotion, incentives, funding, restrictive laws & regulations

Status of “Scoping Scenario” Runs

- Each scenario is a recipe of actions/practices
- Model output for Scoping Scenario 2 & 3
- In the ballpark for achieving 60% and 100%
- Some basins over goals & others under
- Discuss with sectors workgroups and Steering Committee (already shared)
- Will continue to refine and adjust
- Fundamental to an acceptable Watershed Implementation Plan

More Information at:

EPA

http://www.epa.gov/chesapeakebaytmdl/

VA-DCR

http://www.dcr.virginia.gov/soil_and_water/baytmdl.shtml

VA-DEQ

http://www.deq.virginia.gov/tmdl/chesapeakebay.html